IN THE SPECIFICATION:

Please replace paragraph number **[0001]** with the following rewritten paragraph:

[0001] This application is a continuation of application Serial No. 10/052,178, filed January 16, 2002, ~~pending~~ now U.S. Patent 6,588,649 B2, issued July 8, 2003, which is a continuation of application Serial No. 09/678,273, filed October 3, 2000, now U.S. Patent 6,375,061 B1, issued April 23, 2002, which is a continuation of application Serial No. 09/054,227, filed April 2, 1998, now U.S. Patent 6,126,062, issued October 3, 2000.

Please replace paragraph number **[0002]** with the following rewritten paragraph:

[0002] Field of the Invention: This invention relates generally to the manufacture of semiconductor devices. More particularly, the invention pertains to methods and apparatus for clamping portions of leadframes for making conductive wire connections (~~wire bonds~~wirebonds) between portions of the leadframe and the bond pads of the semiconductor device.

Please replace paragraph number **[0003]** with the following rewritten paragraph:

[0003] State of the Art: Semiconductor packages are formed in a variety of different designs. Among the various package configurations are dual~~-in-line~~ inline packages (DIP), zig-zag inline packages (ZIP), small outline J-~~bends~~leads (SOJ), multi-level leads-on-chip (MLLOC), ~~tape-~~tape-under-frame (TUF), thin small-outline packages (TSOP), plastic leaded chip carriers (PLCC), small outline integrated circuit (SOIC), plastic quad flat pack (PQFP), thin quad flat pack (TQFP), and interdigitated leadframe (IDF). Wirebonding of each type of package requires a leadframe clamping device with particular dimensions and/or features.

Please replace paragraph number **[0005]** with the following rewritten paragraph:

[0005] Typically, the leads of a leadframe for a semiconductor device are first formed in multiple pattern units in a leadframe, a metal strip with multiple bonding sites, each of which provides the leads for the packaged device and, in some instances, may provide support for the

semiconductor device. A typical conventional leadframe strip is produced from metal sheet stock, such as a copper alloy, and has "paddles" upon which the semiconductor devices are mounted. During the wirebonding process the leadframe strip is moved and indexed from bonding site to bonding site through a clamping apparatus which retains the leadframe strip at sequential bonding sites for producing a plurality of ~~wire bonded~~ wirebonded semiconductor devices. The typical conventional bonding machine is designed with parallel non-resilient upper and lower clamping surfaces.

Please replace paragraph number **[0007]** with the following rewritten paragraph:

[0007] As manufactured, leadframe strips typically vary in width, camber, and thickness. For example, a leadframe strip may vary in thickness from edge to edge. Even small differences in thickness from one leadfinger to another may significantly affect the clamping effectiveness during the ~~wire bonding~~ wirebonding process. Leadfingers which move during the ~~wire bonding~~ wirebonding process may tend to be insufficiently bonded or have poor ~~wire bonds~~ wirebonds, and, as a result, ultimately fail.

Please replace paragraph number **[0016]** with the following rewritten paragraph:

[0016] United States Patent 5,322,207 of Fogal et al. describes a leadframe clamp with dual wirebonding windows for wirebonding two semiconductor dice at a time, ~~i.e.~~ i.e., without moving the leadframe. A heating block is configured to simultaneously heat the paddle contact areas of both leadframe ~~"frames".~~ "frames."

Please replace paragraph number **[0017]** with the following rewritten paragraph:

[0017] While prior art clamping devices are acceptable, they suffer from a common drawback, i.e., the inability to easily accommodate dimensional variations in the leadframe strip. Wirebond failures resulting from such variations are unacceptable in the current state of integrated circuit (IC) semiconductor device manufacture. A self-leveling clamping apparatus is needed which is inexpensive to construct, quickly adaptable to all leadframe sizes and types,

permits rapid ~~wire bonding~~ of the leads of the leadframe to the bond pads of the semiconductor device, and which significantly reduces damage to wirebonds and leads.

Please replace paragraph number **[0018]** with the following rewritten paragraph:

[0018] The invention comprises an improvement in an apparatus for clamping a ~~substrate;~~ substrate, e.g., ~~leadframe~~ a leadframe, to a wirebonding machine for performing an integrated circuit wirebonding operation. In the invention, a polymeric clamp insert with a wirebonding window and a clamping surface is inserted in a clamp holder. A thin resilient membrane is placed above the clamp insert. The clamp insert has sufficient "play" or latitude of movement so that the clamp insert is self-leveling or self-adjusting on the leadframe upon application of a clamping force. The resilient member ensures that the clamp insert is nearly uniformly compressed downwardly on the leadfingers about the die, irrespective of side-to-side or end-to-end thickness variations in the leadframe.

Please replace paragraph number **[0020]** with the following rewritten paragraph:

[0020] The apparatus of the invention may be incorporated in a multi-member ~~self-~~ self-leveling or self-adjusting insert member which is inserted into a clamp insert carrier. The insert member has a wirebonding window surrounded by a narrow clamping surface wherein compensation for non-uniform leadframe thickness is provided. Preferably, the insert member is formed of a ~~polymer~~ polymer, whereby additional advantages accrue from both the non-conductive electrical property, the low heat conductive property of the insert device, and the degree of elasticity in the polymeric leadframe insert itself. The insert member is configured to provide the required compensation without permanent deformation.

Please replace paragraph number **[0021]** with the following rewritten paragraph:

[0021] In one form, the clamp apparatus of the invention includes (a) a clamp insert holder with an insert aperture therethrough, (b) a clamp insert with a bonding window and a clamping surface to contact the leadframe, (c) an elastic member formed of a polymeric material,

~~e.g.~~ e.g., a polytetrafluoroethylene material or a urethane material, and (d) a retaining member which retains the elastic member in a position biased against the insert.

Please replace paragraph number **[0023]** with the following rewritten paragraph:

[0023] A variety of clamp inserts may be formed for differing semiconductor device/leadframe configurations. Each clamp insert may be used for wirebonding different semiconductor devices, thus minimizing the number of required inserts in a wirebonding operation. Thus, while the clamp inserts may be considered as product specific, each insert may typically accommodate a variety of package types or sizes. Moreover, the clamp inserts are easily and quickly exchanged ~~i.e.~~, i.e., installed and removed, for wirebonding different packages with the same insert carrier.

Please replace paragraph number **[0025]** with the following rewritten paragraph:

[0025] The thin member comprises a layer of a compressible elastic material which acts as a dampener and a self-leveling or self-adjusting device. Upward forces exerted by the leadframe against the insert by non-uniform leadframe width, ~~etc.~~ etc., are absorbed by the layer of elastic material, ensuring a generally uniform clamping force over the entire clamping surface.

Please replace paragraph number **[0026]** with the following rewritten paragraph:

[0026] In addition, heat losses from the leadframe and die are ~~much~~ significantly reduced by the clamp insert which has a low heat conductivity.

Please replace paragraph number **[0041]** with the following rewritten paragraph:

[0041] A representative metal leadframe strip 10 used in semiconductor integrated circuit manufacture is shown in drawing FIG. 1. The leadframe strip 10 is a metallized design configured with ~~several~~ several, ~~e.g.~~ e.g., eight frame sections 12, each frame section having a mounting paddle 14 for mounting a semiconductor device. The leadframe strip 10 includes parallel spaced strip rails 16, 18 formed with a pattern of indexing openings 26 for handling by

automated machinery. The leadframe strip 10 includes within each frame section 12 an array of leadfingers 22 adapted for attachment to the bond pads of a semiconductor device 36 (FIG. 2), hereinafter referred to as a die or dice, during the ~~wire bonding~~ wirebonding process. In general, the terminal ends 24 of the leadfingers 22 will become the external leads of a completed semiconductor package. In the current technology, the metal thickness 62 (FIG. 2) of single-layer leadframe strips 10 is typically about 20 to 40 μm but may be any thickness which permits accurate wirebonding and sufficient strength of the finished leads for the intended purpose.

Please replace paragraph number **[0042]** with the following rewritten paragraph:

[0042] In the manufacturing process, the leadframe strip 10 is typically treated as a unit from attachment of the dice to the mounting paddles 14 up until separation of the individual frame sections 12 of the leadframe strip into unit packaged semiconductor devices.

Please replace paragraph number **[0043]** with the following rewritten paragraph:

[0043] In the wirebonding apparatus and process as practiced with the present invention, a lower clamp member is a planar surface~~, of e.g.~~ such as a wirebonding machine platform and/or block heater, and an upper clamp member~~, e.g.~~ such as a clamp ~~insert~~ insert, clamps a narrow peripheral ~~portion~~ surface 25 about the die and adjacent leadfingers. The dimensions of the peripheral ~~portion~~ surface 25 are configured to provide sufficient room for access of the wirebonding arm to the leadfingers and die, and immobilizing the leadfingers. The leadframe clamping apparatus is illustrated in detail in the following figures and description.

Please replace paragraph number **[0045]** with the following rewritten paragraph:

[0045] A wirebonding platform 32 of a bonding machine is shown with a block heater 34 for heating die 36 and leadfingers (leads) 22 (not shown) of leadframe strip 10 for the wirebonding operation. The wirebonding platform 32 generally comprises a lower clamp member for holding the leadframe strip 10 while conductive wires 48 are bonded to the

leadframe and die 36. The exemplary leadframe clamping apparatus 28 includes (in addition to the wirebonding platform 32) a clamp insert carrier 20, a clamp insert 30 which rides in the clamp insert carrier 20, a thin resilient member 40, and a clamp insert retainer 50. The clamp insert carrier 20 is generally configured to clamp the opposing strip rails 16, 18 (not shown in FIG. 2) of the leadframe strip 10. An insert window 42 in the clamp insert carrier 20 is configured to hold a clamp insert 30 which has a wirebonding window 44 with a lower peripheral surface 46. The lower peripheral surface 46 comprises an upper clamping surface which engages the upper surface of the leadframe strip 10 about the die 36 for wirebonding, the lower peripheral surface 46 corresponding to peripheral ~~portion~~ clamping surface 25 in drawing FIGS. 1 and 1A.

Please replace paragraph number **[0046]** with the following rewritten paragraph:

[0046] The clamp insert 30 and the overlying resilient member 40 are retained in position in the clamp insert carrier 20 by clamp insert retainer ~~50~~ 50, which may be ~~e.g.~~ a metal plate. As mounted, the clamp insert retainer 50, resilient member 40 and clamp insert 30 have coaxial threaded holes 56 through which threaded fasteners 60, such as screws, are threaded into threaded holes 58 along axes 65 in the clamp insert carrier 20. As mounted, the clamp insert 30 is capable of tilting a slight degree in any direction within the clamp insert carrier 20 to compensate for variations in the thickness 62 of the leadframe strip 10.

Please replace paragraph number **[0047]** with the following rewritten paragraph:

[0047] Upon completion of wirebonding a frame section 12, the leadframe clamping apparatus ~~28~~ 28, including the clamp insert carrier 20, clamp insert 30, resilient member 40 and clamp insert retainer 50 are lifted from the leadframe strip 10 and the strip advanced to the next frame section.

Please replace paragraph number **[0048]** with the following rewritten paragraph:

[0048] For a typical clamp insert 30, the width 52 (~~FIG. 1~~FIG. 1A) of the lower peripheral surface 46 may vary from about 0.01 to about 0.08 inches (0.254 to 2.032 mm). Thus,

an exemplary clamp insert 30 having a rectangular wirebonding window with uniform inner dimensions of 0.25 by 0.45 inches (0.635 by 1.143 cm.) will have a total clamping area of approximately 0.0144 to 0.1376 square inches (0.0929 to 0.8877 square cm.). Although width 52 may be as much as 0.08 inch (2.032 mm) or more, a more preferred range of widths is between about 0.02 and 0.04 inches (0.508 and 1.016 mm), at which the clamping area of the lower peripheral area is between about 0.0264 and 0.0528 square inches (0.17 and 0.34 square cm).

Please replace paragraph number **[0049]** with the following rewritten paragraph:

[0049] The preferred insert clamping pressure 102 on a typical frame section by this exemplary clamp insert 30 is ~~variable but,~~ variable, but typically is in the range of about twenty (20) to about thirty (30) psi.

Please replace paragraph number **[0050]** with the following rewritten paragraph:

[0050] The total compressible surface area of the resilient member 40 will typically be much larger than the area of the lower peripheral surface 46 of the clamp insert 30. For example, ~~an~~ a clamp insert 30 of the above example may have a resilient member compressible area of about 0.50 square inches (3.23 square cm), about 10-20 times the area of lower peripheral surface 46. The area of the resilient member 40 may be varied to provide the desired compensation for leadframe variations, depending upon the stress-strain relationship and thickness 54 of the resilient member 40. Thus, the force necessary to achieve a desired compensation may be calculated and enabled by using a resilient member 40 of a particular material, thickness 54 and area. Typically, the thickness 54 of the resilient member 40 is in the range of about 0.005 to 0.1 inches (0.0125 to 0.25 cm.). ~~Members~~Resilient members 40 of differing clamping areas may be provided for a particular clamp insert carrier 20, and selectable for inserts with particular window sizes and clamping areas. The resilient members 40 may be quickly and easily interchanged, for example, by removing four screw fasteners.

Please replace paragraph number **[0051]** with the following rewritten paragraph:

[0051] As an example, a leadframe clamping apparatus 28 of the invention may be configured for a maximum dimensional compensation (insert movement or tilting) of about 0.0002 to 0.02 inches (0.0005 to 0.05 cm.). The compensation movement is to be absorbed by a resilient member 40 of about 0.005 to 0.1 inch (0.0125 to 0.25 cm.) thickness.

Please replace paragraph number **[0052]** with the following rewritten paragraph:

[0052] The ~~clamping~~ clamp insert 30 has an enlarged upper portion 70 in which the wirebonding window 44 has expanded dimensions for accommodating the bonding machine head, not shown. The clearances 66, 68 between the outer wall surfaces 64 of the clamp insert 30 and the insert window 42 of the clamp insert carrier 20 are configured to provide a desired tiltability of the clamp insert 30.

Please replace paragraph number **[0053]** with the following rewritten paragraph:

[0053] The ~~clamping~~ clamp insert 30 is preferably formed of a polymeric material such as polyimide. Vespel polyimide material, a trademarked material produced by DuPont, has been found to be very suitable, although other polymers with similar mechanical, electrical and heat conduction properties may be used.

Please replace paragraph number **[0054]** with the following rewritten paragraph:

[0054] Exemplary embodiments of the present invention for use on a Kulicke & Soffa Industries model 1484 wirebonding machine are depicted in ~~drawing~~ drawings FIGS. 3 through 11. Other suitable wirebonding machines are commercially available from a variety of manufacturers, including (in addition to K & S), Shinkawa, Kiajo Denki, and ESEC.

Please replace paragraph number **[0055]** with the following rewritten paragraph:

[0055] In the remaining ~~drawing~~ drawings FIGS. 3 through 11, the leadframe strip 10 is not illustrated or pictured, but it is understood that the ~~wirebonding clamp~~ leadframe clamping

apparatus 28 is for clamping a leadframe strip to an underlying wirebond machine platform, with a bonding site of the leadframe ~~strip~~ strip, i.e. die and ~~leadfingers~~ leadfingers, accessible through the wirebonding window of the clamp insert 30.

Please replace paragraph number **[0056]** with the following rewritten paragraph:

[0056] As depicted in drawing FIG. 3, a leadframe clamping apparatus 28 of the invention for wirebonding LOC and SOJ devices uses ~~an~~ a clamp insert carrier 20 with holes 72 for mounting leaf spring members 74. Such leaf spring members 74 are downwardly biased and push the leadframe strip 10 (not shown) away from the clamp insert carrier 20 and clamp insert 30 when the clamp insert carrier 20 is lifted for moving the leadframe strip 10. The leaf spring members 74 are disclosed in U.S. Patent 5,322,207, commonly assigned to the assignee of the present invention. As described in that publication, the clamp insert carrier 20 also has holes 78 and 80 for aligning the clamp insert carrier 20 with the lower clamp member (not shown), the upper compression force driver (not shown), and the leadframe strip 10.

Please replace paragraph number **[0057]** with the following rewritten paragraph:

[0057] The surface 43 of insert window ~~43~~ 42 of the clamp insert carrier 20 is shown with subsurface stages 76 upon which the clamp insert 30 is mounted by threaded fasteners 60 seated in threaded holes 58. When fully seated and at its lowermost position in the insert window 42, the lower peripheral surface 46 (see ~~drawing~~ drawings FIGS. 4, 6) of width 52 is below the lower surface 82 of the clamp insert carrier 20 and biased downwardly by the clamp insert retainer 50 and intervening ~~resilient~~ dampening/compensating/adjusting/aligning resilient member 40. The exemplary insert window 42 is shown with sloping walls 84. The clamp insert carrier 20, ~~clamping~~ clamp insert 30, resilient member 40 and clamp insert retainer 50 are joined and held together by threaded fasteners 60 threaded into threaded holes 58 along axes 65 in the clamp insert carrier 20. The threaded fasteners 60 are fastened to the clamp insert carrier 20 such that the clamp insert 30 may be pushed upwardly against the resilient member 40, which resists upward movement of the clamp insert 30, but permits a slightly tilted or canted engagement of

the clamp insert against it. Thus, the resilient member 40 permits self-leveling of the clamp insert 30 to compensate for non-uniformity of leadframe thickness 62.

Please replace paragraph number **[0058]** with the following rewritten paragraph:

[0058] The embodiment of polymeric clamp insert 30 shown in ~~drawing~~ drawings FIGS. 3 through 9 is particularly configured for wirebonding a leads-on-chip (LOC) semiconductor package with small-outline J-~~bends~~leads (SOJ). The clamp insert 30 has a mounting flange 86 and a window frame 88 which is peripheral to the wirebonding window 44 and extends downwardly to a lowermost window opening 44A. The inner walls 90 of the window frame 88 may be sloped from a relatively large upper window opening 44B at angle 94 as shown to provide working room for the automated wirebonder to operate. The inner walls 90 are dimensioned and shaped to achieve operating room for wirebonding a device requiring a particular sized lowermost window opening 44A. The general dimensions of the lowermost window opening 44A are shown as width 96 and length 98. The mounting flange 86 may include alignment holes 92 to accurately position the clamp insert 30 within the clamp insert carrier 20. The outer wall surfaces 64 of the ~~clamping~~ clamp insert 30 may be partially sloped, such as at angle 100.

Please replace paragraph number **[0059]** with the following rewritten paragraph:

[0059] As depicted in drawing FIG. 3, the resilient member 40 is a thin member of ~~e.g.,~~ e.g., polytetrafluoroethylene or ~~urethane~~ urethane, which has a window 44C which generally is about equivalent to window opening 44B in dimensions. The resilient member 40 may be stamped or cut to the desired dimensions for placement atop the ~~clamping~~ clamp insert 30. The resilient member 40 is shown with threaded holes 56 for passage of threaded fasteners 60. The preferred materials of construction have a coefficient of compression of between about fourteen (14) and about 35 mpA @ 1% of strain and a permanent deformation point which is sufficiently high to be ~~unattained~~ unattainable in this application. As already noted, the thickness 54 of the resilient member 40 is between about 0.005 and about 0.1 inch (0.0125 and

0.25 cm), depending upon its mechanical properties, expected variation in leadframe strip thickness 62, clamping pressure, and configuration of the ~~clamping~~ clamp insert 30.

Please replace paragraph number **[0060]** with the following rewritten paragraph:

[0060] The clamp insert retainer 50 is shown as a flat plate with window 44D and threaded holes 56 which generally match those of the resilient member 40.

Please replace paragraph number **[0061]** with the following rewritten paragraph:

[0061] Referring to drawing FIG. 10, another embodiment of the invention is depicted as using a "universal" clamp insert carrier 20 having a shape similar to that disclosed in U.S. Patent 5,307,978. In that reference, the clamp insert carrier 20 has a simple window merely comprising a hole, and is held immobile by a clamp frame member at each end of the carrier. The underlying leadframe strip 10 (not shown) is movable in x, y, z and theta directions for positioning during wirebonding.

Please replace paragraph number **[0062]** with the following rewritten paragraph:

[0062] As shown in drawing FIG. 10, the clamp insert carrier 20, as modified in accordance with the invention, comprises flat plate portions 110, each with an upturned flanged end 112. The flanged ends 112 are fixed to the base of a work station, not shown, by, ~~e.g.~~ e.g., threaded fasteners passed through apertures 114. Additional apertures 116 may be provided for alignment of the clamp insert carrier 20 with the underlying platform and leadframe strip, not shown in this figure.

Please replace paragraph number **[0063]** with the following rewritten paragraph:

[0063] A centrally located insert window 120 is sited between two endframe members 118. A generally horizontal matte portion 122 limits downward movement of a ~~clamping~~ clamp insert 30 and defines the lowermost open window portion 126 of the insert window 120.

Please replace paragraph number **[0064]** with the following rewritten paragraph:

[0064] The ~~clamping~~ clamp insert 30 (see FIGS. 10 and 11) is a simple window frame ~~with~~ with a wirebonding window 134, and fits into the insert window 120. The clamp insert 30 has a flange portion 124 which mounts on the matte portion 122, and a lower peripheral portion 128 which extends downwardly through the lowermost open window portion 126 of the insert window 120 of the clamp insert carrier 20, to be below the lower surface 130 of the clamp insert carrier. As in the embodiment already described herein, the bottom surface 132 of the lower peripheral portion 128 engages and clamps downwardly on the leadframe strip about the die and leadfinger ends of a frame section. The lower peripheral portion 128 of the clamp insert 30 is shown with slots 136, whose purpose is to provide clearance for the tie bars connecting the die paddle to other portions of the leadframe that are not clamped during the ~~wire bonding~~ wirebonding operations. The insert window 120 and clamp insert 30 are configured to have a limited degree of linear vertical and tilting motion, so that the bottom surface ~~132~~ 132, comprising an upper ~~clamp~~ clamp, may be self-leveling or self-adjusting on the leadframe.

Please replace paragraph number **[0065]** with the following rewritten paragraph:

[0065] As already indicated, the clamp insert 30 is preferably formed of a polymeric material such as polyimide.

Please replace paragraph number **[0066]** with the following rewritten paragraph:

[0066] While the exemplary clamp insert 30 shown in ~~drawing~~ drawings FIGS. 10 and 11 is designed for wirebonding of a thin-quad-flat-pack (TQFP) device, the window may be shaped and sized to accommodate any other packaging designs and sizes, including those with multi-level leads. The wirebonding window 134 may be of any shape and size for wirebonding a particular ~~die~~ die-leadframe combination. Thus, the wirebonding window 134 may be round or octagonal, for example.

Please replace paragraph number **[0067]** with the following rewritten paragraph:

[0067] The resilient member 40 is formed of a thin sheet of material, ~~e.g.~~ e.g., polytetrafluoroethylene material or urethane material, in which window 138 is formed. The resilient member 40 absorbs upwardly directed forces of the clamp insert 30 as a clamping force is applied. The resistance of resilient member 40 may be varied by varying its thickness and planar surface area, and/or using a different material.

Please replace paragraph number **[0068]** with the following rewritten paragraph:

[0068] The clamp insert retainer 50 is depicted as a cover plate with turned-down ends ~~142~~ 142, with tabs 144, and a window 140 in its horizontal surface 146 (see FIG. 10). The clamp insert retainer 50 holds the ~~clamping~~ clamp insert 30 in the insert window 120 and holds the resilient member 40 atop the retainer. As shown, each of two lock bars 104 has a lower indent 145 ~~(see FIG. 10)~~ into which a retainer tab 144 fits. The lock bars 104 are placed over the two retainer tabs 144 and attached by suitable threaded fasteners, not shown, through holes 152 and along axes 148 into threaded holes 150.

Please replace paragraph number **[0069]** with the following rewritten paragraph:

[0069] As shown in drawing FIG. 10, the clamp insert 30, resilient member 40 and clamp insert retainer 50 are formed without any threaded holes, thus simplifying their construction.

Please replace paragraph number **[0070]** with the following rewritten paragraph:

[0070] The leadframe clamping apparatus 28 may be advantageously used for wirebonding a tape-under-frame (TUF) device configuration. In TUF, the lead pattern is formed on a tape. During wirebonding, the tape, rather than the metal lead pattern, is directly exposed to the heating block. The variation in thickness of the leadframe-tape combination often makes effective clamping difficult. The self-leveling or self-adjusting feature of the leadframe clamping apparatus 28 overcomes this problem.

Please replace paragraph number **[0071]** with the following rewritten paragraph:

[0071] There are numerous advantages to the leadframe clamping apparatus 28 as described herein. First, movement of leadfingers during wirebonding is avoided, enabling more uniform and precise bonding. In addition, heat losses through the leadframe clamping apparatus are reduced because of the low heat transfer of the clamp insert. Consistent bonding temperatures are achieved across all leads of the leadframe strip. Thus, the rate of wirebond rejection may be significantly decreased.

Please replace paragraph number **[0072]** with the following rewritten paragraph:

[0072] ~~Clamping~~Clamp inserts 30 may be quickly and cheaply made of polymeric material without grinding, polishing or heat treatment. They may be formed in a variety of designs and dimensions for every type and size of package which is to be made. The clamp inserts 30 may be easily and quickly interchanged without distorting a tool setup. Where the heating block does not need to be interchanged, for example, in converting from a LOC to a TUF device, conversion is very quick.

Please replace paragraph number **[0073]** with the following rewritten paragraph:

[0073] Interchangeable resilient members 40 may be punched out of inexpensive sheet material to achieve any desired correction of dimensional variation in a leadframe. A minimum of storage space is required for storing a supply of replacement resilient members 40 and clamp inserts 30 in all useful styles/sizes/materials.

Please replace paragraph number **[0074]** with the following rewritten paragraph:

[0074] The clamp insert 30 and resilient member 40 may be used repeatedly without damage because, in use, the permanent deformation pressure is never attained.

Please replace paragraph number **[0075]** with the following rewritten paragraph:

[0075] The net result of using the apparatus is a reduction in time from the design stage to commercial production. Furthermore, the tooling costs may be ~~much~~ significantly decreased. In addition, the rejection rate is decreased, resulting in greater profitability.